

REMARKS

Claims 1-58 are pending in this application. Claims 11-18, 20-49 and 54-58 are withdrawn as directed to a non-elected invention. Claims 2-6, 52 and 53 are canceled herein without prejudice. Claims 1, 7, 10, 19 and 51 are amended herein for clarity to more particularly define the invention. Support for these amendments is found throughout the specification and in the original claim language as set forth below. No new matter is added by these amendments and their entry is respectfully requested. In light of the amendments presented herein and the following remarks, applicants respectfully request reconsideration of the pending application and allowance of the pending claims to issue.

I. SEQUENCE RULE COMPLIANCE

The Office Action states that Tables 1-1 and Figure 2B recite sequences without sequence identification numbers and that appropriate amendment is required.

Pages 8 and 9 of the specification are amended herein so that all sequences shown in Tables 1 and 2 and in Figure 2B are identified by sequence identification numbers. Thus, applicants believe the application is in compliance with the requirements for sequence disclosures.

II. OBJECTION TO INCLUSION OF NON-ELECTED SPECIES

The Office Action states that claims 1-3 are objected to because parts of claims 1-3 are drawn to non-elected variants, which belong to group 2. The Office Action further states that claims 6-7 are objected to because part of claims 6-7 are drawn to non-elected sequences, which belong to group 2.

The cited claims are either canceled herein without prejudice or amended herein so that they do not include non-elected species. Thus, applicants believe this objection has been adequately addressed and its withdrawal is requested.

III. REJECTION UNDER 35 USC § 101

The Examiner has rejected claims 1-10, 19 and 50-53 under 35 USC §101 on the grounds that the claimed invention is allegedly not supported by a specific, substantial asserted utility.

The Examiner notes correctly that the specification discloses, by various experimental approaches, that Ese1, for which the encoding nucleotide sequence is claimed, is involved in the control of endocytosis. As noted by the Examiner, overexpression of nucleotide SEQ ID NOs:1 or 2 blocks endocytosis in Cos-1 cell cultures and the Ese1 protein of SEQ ID NO:3 binds to proteins known to be necessary for endocytosis. These findings provide a basis for further studies of the control of endocytosis by Ese, which is a real world utility sufficient to support the claims under examination.

Additionally, the specification discusses the relationship of endocytosis and HIV infection. The specification also predicts the binding of Ese proteins to NEF, a known protein which induces endocytosis. The specification therefore teaches a real utility for Ese in studies of intervention into HIV binding. Thus, applicants believe this rejection has been overcome and respectfully request its withdrawal.

The applicant has not at this point responded in detail to the Examiner's comments on the role for Ese in disease diagnosis and treatment since no treatment claims are presently under examination.

IV. REJECTION UNDER 35 USC § 112, first paragraph, Enablement

The Examiner has rejected claims 1 to 10, 19, and 50-53 under 35 USC § 112, first paragraph, on the grounds that these claims are allegedly not enabled. This objection is based on the Examiner's rejection that there is lack of utility.

As discussed above, it is respectfully submitted that the specification does demonstrate that the claimed invention does have a specific and substantial utility and that the specification provides an adequate enabling disclosure of the claimed invention to carry out this utility. Thus, applicants believe this rejection has been overcome and respectfully request its withdrawal.

V. REJECTION UNDER 35 USC § 112, first paragraph, Written Description

The Examiner has rejected claims 1-4, 7-10, 19 and 50-53 under 35 USC § 112, first paragraph, on the grounds that the specification allegedly does not contain an adequate written description of the subject matter thereof.

With respect to claims 1 to 4, the Examiner argues that the specification fails to describe mammalian, human or genomic Ese sequences.

Claim 1 is amended herein to recite specific disclosed nucleotide sequences and claims 2 to 4 are canceled herein without prejudice, thereby overcoming the rejection of these claims and applicants respectfully request its withdrawal.

Claims 9, 10, and 19 are dependent directly or indirectly on amended claim 1 and are therefore appropriately described in the application.

With respect to claim 7, the Examiner argues that a complement could be a partial complement, thereby incorporating undescribed species. Claim 7 is amended herein to recite sequences with complete complementarity. Claims 8, 50 and 51 are

dependent directly or indirectly on claim 7 and are adequately described in the application. Claims 52 and 53 are canceled herein without prejudice. Thus, applicants believe that this rejection has been adequately addressed and respectfully request its withdrawal.

VI. REJECTION UNDER 35 USC § 112, first paragraph, Scope

1. The Examiner has rejected claims 1-4, 7-10, 19 and 50-53 under 35 USC § 112, first paragraph, in what appears to be a further enablement rejection. As noted above, claim 1 is amended to refer to specific disclosed sequences and claims 2 to 4 are canceled herein without prejudice. Claims 9, 10 and 19 are dependent on amended claim 1.

As also noted above, claim 7 is amended herein to recite complete complementarity and claims 8, 50 and 51 are dependent on claim 7.

2. The Examiner has also rejected claims 4 and 53 under USC § 112, first paragraph, on the grounds that the specification allegedly does not enable a genomic Ese1 sequence.

This objection has been rendered moot by the cancellation of claims 4 and 53.

3. The Examiner has also rejected claims 10, 19 and 51-53 under 35 USC § 112, first paragraph, as allegedly not enabled.

Claims 10, 19 and 51 are amended herein to recite an isolated host cell. Claims 52-53 are canceled herein without prejudice.

4. The Examiner has rejected claim 52 under 35 USC § 112, first paragraph, as allegedly not enabled.

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It is respectfully submitted that there was a typographical error in the dependency of claim 52, which should have been apparent, and applicants were not suggesting making murine Ese1 protein by expressing human Ese1 DNA. Claim 52 is, however, canceled herein, thereby mooted this rejection.

VII. REJECTION UNDER 35 USC 102(b) or (e)

The Examiner has rejected claims 7 and 8 under 35 USC § 102(b) as allegedly anticipated by Genbank Sequence Accession No. U61166, which allegedly teaches a sequence which is 69% similar to the portion of SEQ ID NO:1 from nucleotide 2112 to nucleotide 5061.

The Examiner has not identified the portions of Sequence U61166 which allegedly correspond to SEQ ID NO:1 or provided any evidence of the sequence comparison by which the figure of 69% similarity was reached.

The Examiner argues only that a partially complementary sequence could be anticipated by the cited reference. Claim 7 is amended herein to recite completely complementary sequences, which addresses the Examiner's rejection of these claims, claim 8 being dependent on claim 7.

The Examiner has also rejected claims 7 and 8 under 35 USC § 102(e) as anticipated by US Patent Publication No. 20020034755A1 (now U.S. Patent No. 6,309,820), and particularly by SEQ ID NO:193 thereof, which allegedly is 60% similar to the portion of SEQ ID NO:2 from nucleotide 2609 to 3642.

The Examiner has not provided a copy of the sequence shown in US Patent No. 6,309,820 or any evidence of the sequence comparison by which the figure of 60% similarity to SEQ ID NO:2 was reached.



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The Examiner appears only to be arguing that a partially complementary sequence could be anticipated by the cited reference. Claim 7 is amended herein to recite a completely complementary sequence, and claim 8 is dependent on claim 7, which overcomes the Examiner's rejection of these claims.

For the reasons set forth above, applicants believe that all of the pending rejections have been adequately addressed and that the present claims are in condition for allowance, which action is respectfully requested. The Examiner is invited and encouraged to contact the undersigned directly if such contact will expedite the prosecution of this application to issue.

A check in the amount of \$475.00 as fee for a three month extension of time for a small entity is enclosed. This amount is believed to be correct. However, the Commissioner is authorized to charge any deficiency, or credit any overpayment, to Deposit Account 50-0220.

Respectfully submitted,

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